



# Fletcher Prescribed Burn Escape

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## *Facilitated Learning Analysis*



Southern Region, Ouachita National Forest,  
Poteau/Cold Springs Ranger District  
April 2010

## Table of Contents

<b>Introduction .....</b>	<b>3</b>
<b>Vicinity Maps .....</b>	<b>5</b>
<b>Story of Events .....</b>	<b>6</b>
<b>Lessons Learned and Recommendations .....</b>	<b>10</b>
<b>Appendix A</b>	
Required Review Elements as per the Interagency Prescribe Fire Guide .....	<b>11</b>
<b>Appendix B</b>	
Forest Service Law Enforcement Report .....	<b>12</b>

### **REVIEW TEAM**

Kent Davenport,  
Fire Staff Officer, National Forests in Alabama

Jay Boykin,  
Fire Management Officer, Desoto Ranger District, National Forests in Mississippi

Lea Wofford,  
Regional Fire Safety Program Manager, Southern Region, Atlanta, Georgia

Mary E. Lane,  
Wildlife Biologist, Ouachita National Forest, Hot Springs, Arkansas

## **INTRODUCTION**

On April 8, 2010, the Fletcher Block 2 (Fletcher burn), a 2466 acre prescribed fire, was ignited on the Poteau/Cold Springs Ranger District of the Ouachita National Forest. A wildfire (Road 39 Fire), adjacent to the Fletcher burn was discovered and contained on April 14, 2010. The Road 39 fire was likely caused by residual burning from the Fletcher Block 2 prescribed burn. No structures were lost, however 212 acres of private land were involved in the Road 39 wildfire.

On April 18, 2010, Ouachita National Forest, Forest Supervisor, Norm Wagoner assembled an agency team to analyze and review the procedures involved with the Fletcher prescribed burn and associated wildland fire. The team utilized the Facilitated Learning Analysis (FLA) approach, with the goal of improving future prescribed fire program actions by gathering lessons learned from those involved.

The focus of an FLA is not to place blame on any parties involved; but to foster a learning environment for other firefighters, fire managers and land managers across the nation recognizing similarities that may prevent future escapes.

The analysis team conducted a site visit on April 21, 2010. Prior to the site visit, the team conducted a facilitated After Action Review (AAR) at the Cold Springs District office. Most of the individuals who were directly involved with the Fletcher prescribed burn participated in the AAR. The purpose of the AAR was to look at what was planned, what actually happened, why it happened and to develop lessons learned from the experience. Those involved were encouraged to be honest and frank in the discussions. Participants were assured that the intent of this report was to foster organizational learning from the event. On April 22, the team reviewed all pertinent documentation, including the burn plan, weather forecasts, maps and photographs.

The analysis team reviewed the qualifications for the Line Officer and those involved with the Fletcher burn. Qualifications and experience levels for all involved were met.

This report contains an introduction and brief summary of the event, the location of the prescribed burn and associated wildfire, a story of the events and lessons learned by those involved and recommendations from the FLA team.

### **Brief Summary**

Due to good weather, the Poteau/Cold Springs Ranger District had been prescribed burning every day the previous week. Because of the location of the private plantation on the south side of the Fletcher burn, the district needed a north wind to conduct the burn. 1.15" of rain was recorded in the area on April 4, 2010. Two prescribed burns were conducted on the same

day, the Fletcher burn and the Blue Moon burn. This however is not an uncommon practice for the district and did not contribute to the escape. There were minor holding and organizational problems which delayed completion of the burn; none of which contributed to the eventual Road 39 wildfire. A wildfire, in the vicinity of the Fletcher burn, also occurred on the evening of the Fletcher burn. A small contingent of resources from the Fletcher burn was sent to initial attack the wildfire. Over the next 5 days, the Fletcher burn was checked in a number of different ways. The fire lines were checked by walking, riding in a UTV, aerial observation and observation from a vantage point away from the burn. So the district could continue its burn program, previous prescribed burns were checked in the early morning and late afternoon hours. Those involved in the AAR agreed that this was probably not the best time to check the older burns due to cooler temperatures and higher humidity's in the morning and evenings keeping any visible smoke at bay. On April 12, the Arkansas Forestry Commission detection plane reported smoke in the interior of the Fletcher burn. A district employee walked the southern fire line adjacent to the private plantation to insure the burn was still inside of the lines. No visible smoke was found along the line. On April 13, the Fletcher burn was observed in the morning hours by a district employee from a vantage point on Road 23, again no visible smoke was observed.

On Wednesday, April 14, at 1356 hours a smoke was reported near the Fletcher prescribed burn. The Arkansas Forestry Commission responded with the first resources. The wildfire was managed as a unified command and was contained at 333 acres at 1803 hours. The acreage included 59 acres FS; 190 acres of Deltic Timber Company and 84 acres of other private lands.

Although it is impossible to be certain, it appears likely that the Fletcher prescribed burn of April 8, 2010, escaped the control lines during the afternoon or evening hours of April 13, 2010, resulting in the Road 39 wildfire. A green oak, which had previously been broken off at a height of 10 to 12 feet above the ground, was found on the day of the wildfire, April 14, 2010, still emitting sparks capable of causing an ignition outside the control lines. At the request of the FLA team, Forest Service Law Enforcement and Investigations conducted a secondary investigation on April 23, 2010, with consistent findings.

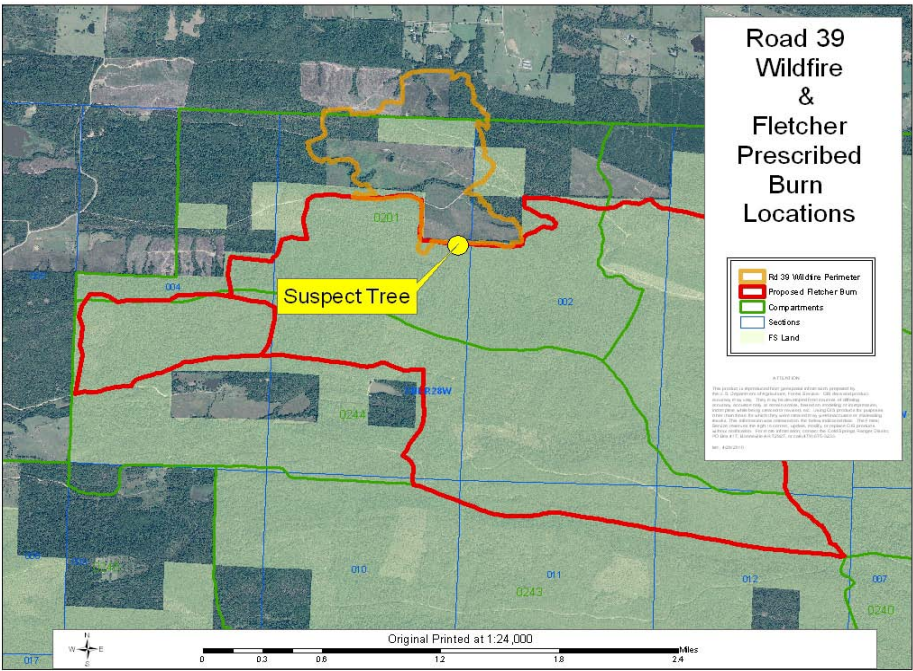
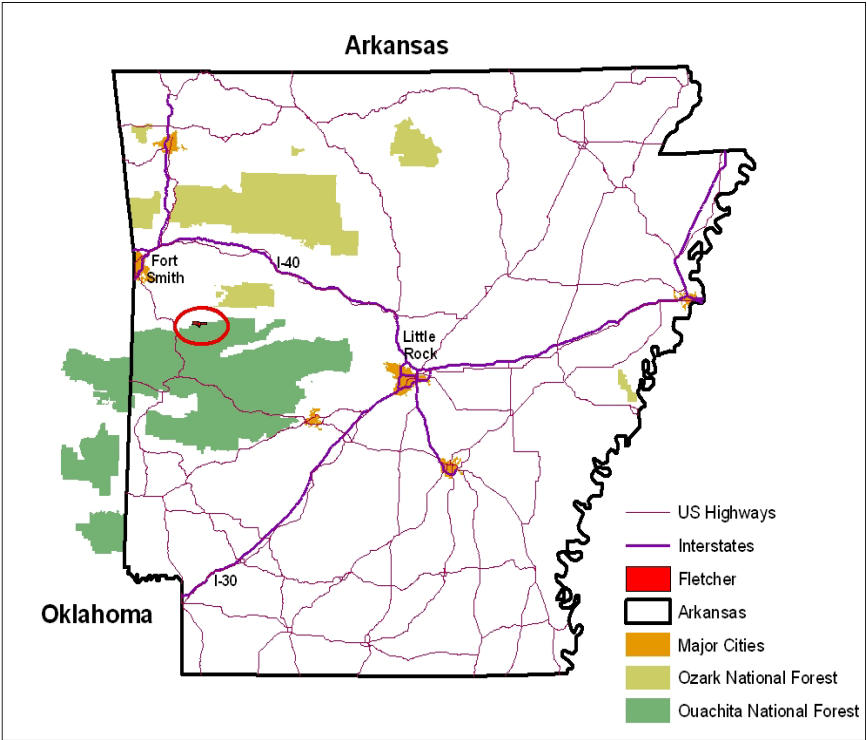
### Area Specifics



Fuels in the Fletcher burn consisted of a Fuel Model 9, hardwood leaf litter. The surrounding fuels were primarily the same model with the exception of the private pine plantation on the north side of the burn which consisted of grasses and 2 to 3 year old pine seedlings (Figure 1). According to one AAR participant, "things were getting pretty dry". But no indications of drought were found in the project area.

Figure 1

**Vicinity Maps**



## STORY OF EVENTS

### April 8, 2010

At 0730 the Fletcher prescribed burn request was approved by the Ouachita Forest Supervisors office. It was determined at this time that no variance was needed before the burn was conducted. Therefore the burn was approved.

Prescribed burn resources (refer to table below) assembled at the burn at 1100 and a pre-burn briefing was conducted at 1130. The briefing utilized the Fire Use Briefing and Tailgate Safety Checklist.

#### Personnel Involved With Fletcher Prescribed Burn

Position	Quantity
Burn Boss	1
Burn Boss Trainee	1
Firefighter	7
Firing Boss	1
PLDO	1

At 1200 hours, the test fire was initiated. At 1223, after observing the test fire and associated fire behavior, the burn boss made the decision to begin hand firing the control lines on the Southeast portion of the fire.

Before the helicopter arrived, personnel continued to hand fire the control line on the east side proceeding north while also firing the control line from south to west.

The prescribe burn helicopter with PREMO machine arrived over the burn at 1400 hrs and began aerial firing at 1415. During this time, personnel on the ground began holding the lines that were hand fired and also worked to contain small spot-fires that were found along the south line.

At 1510, the helicopter stopped firing due to a spot-over on the south line. At this time, the helicopter had to return to the airport to refuel and hook up the Bambi bucket. Upon returning to the burn, the helicopter took suppression action until the district dozer arrived and contained the spot fires.

At 1826 a wildfire was reported ½ mile south of the Fletcher prescribed burn. An Initial Attack Incident Commander, 2 firefighters, 1 Type 6 Engine, 1 Type 3 Dozer and an LEO were dispatched to the wildfire (Gray Ridge). All resources were released from this fire at 2128.

At 1900, aerial firing was completed, and at 1943, all hand firing was completed.

At 2107, all resources were released from the Fletcher prescribed burn.

At 2229, all resources arrived at the Cold Springs Work Center.

#### **April 9, 2010**

In the A.M., before proceeding to another burn unit, 4 firefighters performed an initial check of the fire lines around the Fletcher burn unit. The firefighters found the lines cold except for one snag located on the North side of the burn. The snag was cut down. The fire line around the private plantation was monitored with a UTV and nothing hot was found.

At 0730, a district employee arrived to performed field work (pond flagging) inside of the Fletcher burn all day and did not observe anything unusual.

At 1300, the district prescribed burning helicopter with 2 district employees onboard flew recon over the Fletcher burn. They observed no smokes, no slop-over's, or hotspots along the fire lines.

#### **April 10, 2010**

Early in the A.M. a district employee observed the Fletcher burn from his vehicle on Highway 23. He observed smoke in the interior of the burn unit but no smokes were observed in or around the private plantation. The FLA team found this observation spot to be a good observation point for the Fletcher burn.

At 1600 the district burn helicopter with one district employee onboard flew recon over the Fletcher burn; no smokes, slop-over's, or hotspots were observed along the fire lines.

Before going home for the day, a district employee observed the Fletcher burn from his vehicle on Highway 23. He observed smoke in the interior of the burn unit but no smokes were observed in or around the private plantation.

#### **April 11, 2010**

Early in the A.M. a district employee observed the Fletcher burn from his vehicle on Highway 23. He observed smoke in the interior of the burn unit but no smokes were observed in or around the private plantation.

At 1900, a district employee drove Road 39 and checked to see if the private plantation contained any snags. Only smoke seen was in the interior at least ¼ mile south over the ridge.

### **April 12, 2010**

Early in the A.M. a district employee observed the Fletcher burn from his vehicle on Highway 23. No smoke was observed. Another district employee drove to a vantage point on the 39 road where he could see most of the private plantation. No smoke was observed.

At 0730, a district employee performed field work inside of the Fletcher burn all day and did not observe anything unusual.

Sometime during the mid-morning hours, a State of Arkansas detection plane reported smoke in the Fletcher burn south of the private plantation.

At 1900, a district employee walked the fire line around the private plantation; he noted nothing unusual along the fire line.

### **April 13, 2010**

At 0730, a district employee was visiting the burn area with a contractor. They did not observe anything unusual.

At 0900, a district employee again viewed the private plantation from a vantage point along the 39 road for approximately 10 minutes. He did not observe any smoke in the area adjacent to the plantation.

### **April 14, 2010**

The Fletcher burn was not observed this day due to there being no activity on the previous days.

At approximately 1315, the District contacted the USDA Small Farms Research office, located north of the Fletcher burn, to check on a smoke visible from the Booneville RD office. The USDA office stated they had no burning being conducted.

In the early afternoon, a district employee was sent out to check on a visible smoke near the Fletcher burn unit. At 1356, the district employee confirmed there was a fire in the private plantation just off road 39 adjacent to the Fletcher burn unit.

At approximately 1430, the Arkansas Forestry Commission reported a wildfire in the vicinity of the Fletcher burn.

Late in the afternoon, district employees met with the district Law Enforcement Officer (LEO) on the Fletcher Burn and the Road 39 wildfire. It first appeared to the LEO that the Road 39 wildfire was arson caused.

The Road 39 wildfire was contained at approximately 1800 hours.

At approximately 2030, a district employee and an Arkansas Forestry Commission employee walked the fire line adjacent to the private plantation that was consumed in the Road 39 wildfire. The district employee noticed a small piece of wood burning adjacent to the line and also saw what appeared to be sparks coming out of a green snag adjacent to the line (cover photo). Upon further investigation, it was thought that this green snag could have been the heat source that caused the wildfire to occur across the line into the private plantation.

**April 23, 2010**

The District FMO and two LEO's performed a thorough investigation around the private plantation and the Road 39 wildfire and made the determination that arson was not the cause of the wildfire.

## Lessons Learned and Recommendations from the Participants and FLA Team

During the AAR process, the FLA team asked the participants what they would do differently or what they learned that should be shared with other firefighters. The FLA team believes the district took every reasonable precaution to prevent the escape fire. Listed below are lessons learned that did not have a direct effect on the escape but are lessons and recommendations that can be applied across the board to future prescribed burns.

### *Post-burn Evaluations:*

- ☀ Be more observant in looking at the entire area.  
Lessons Learned: When conducting post burn patrols, be more observant in looking at the entire area, including looking up. Check both green and dead trees for heat.
- ☀ Patrol previous prescribed burns during the burning period (mid-afternoon). This will allow smokes to be more visible to the observer. A comment was made by one of the AAR participants that if he checked his burns in the middle of the day (the burning period) he would run thin on resources to conduct future burns.  
Recommendation: Have the contingency resources check the previous day's burns.  
Recommendation: Take one day to do nothing but check previous burns. This will allow time to reflect on previous burns and plan for future burns. Plus give burning resources a day off.

### *Organization:*

- ☀ Control problems were experienced the day of the burn. This could have been caused by using inexperienced prescribed burn personnel. Over the past couple of years, the district has lost several of their experienced fire personnel.  
Lessons Learned: Rearrange crew makeup, mix experienced prescribed fire personnel with less experienced personnel.

### *Communications:*

- ☀ Communications were not working well on the day of the burn. This may be due to the large size of the burn and placement of personnel.  
Lessons Learned: Utilize a non-fire qualified person as a human repeater.

## APPENDIX A

### Required Review Elements as per the Interagency Prescribe Fire Guide

➤ **Analysis of seasonal severity, weather events, and on-site conditions**

The winter and early spring in west central Arkansas had been cooler and wetter than normal. At the time of ignition, there were no indicators of drought. Live fuels were in the process of green-up. Weather was not unusual for the time of year. There were no significant or unusual winds observed from the time of ignition, throughout the implementation, and to wildfire declaration. The burning index and 1000 hour fuel moisture were within normal ranges. Based on FireFamily Plus calculations from the Booneville weather station, the 100 hour fuel moistures were at the 90<sup>th</sup> percentile and very near the eleven year low for that date. The calculated energy release component was above the 90<sup>th</sup> percentile. All other commonly used prescribed fire parameters were normal.

➤ **Analysis of actions taken for consistency with the Prescribed Fire Plan**

All 21 elements of the Fletcher prescribed fire plan were analyzed by the team, and compared with actions taken for consistency. The implementation of the plan including burn preparation, ignition, holding, post burn activities and wildfire conversion were all consistent with the plan. Two actions, which were required by the plan, were done but not documented in the plan. In Element 9, four notifications are listed but there is no date and initial for the action. In Element 16, the minimum organization includes utility vehicles and engines. The completed organization chart, for the day of the burn, lists no UTVs or engines.

➤ **Analysis of the Prescribed Fire Plan for consistency with Policy**


The Analysis Team looked over the Prescribed Fire Burn Plan which was developed by a qualified RXB2 with technical review by another qualified RXB2. The team found that the plan met all policy requirements with one minor exception. The Interagency Planning and Implementation Procedures Guide requires a dated signature by the plan preparer.

➤ **Analysis of the prescribed fire prescription and associated environmental parameters.**

Prescription parameters for the Fletcher burn were consistent with the established regional and forest standards. The ranges of weather, fuel moisture conditions and fire behavior parameters were consistent for prescribed fires in this forest type. The BEHAVE calculations produced reasonable outputs and the inputs were consistent with weather forecasts and known fuel conditions. The Ignition and resulting fire behavior met the prescribe fire plan objectives.

During ignition operations on April 8<sup>th</sup> the prescribed fire stayed within the environmental prescription parameters. One parameter that was omitted from the prescription page is the NFDRS. The Prescribed Fire Implementation Guide for the Ouachita and Ozark – St. Francis National Forest establishes a Burning Index of 60 as the threshold.

## APPENDIX B

 <b>USDA Forest Service</b>		<b>REPORT OF INVESTIGATION</b> <i>(Reference FSH 5309.11)</i>		Case/File Number <b>9080697</b>																																	
Controlling Office <b>Region 8, Law Enforcement &amp; Investigations</b>			Investigating Office <b>Region 8, West Zone, Law Enforcement &amp; Investigation</b>																																		
Case Type <b>Civil</b>			Investigative Period From: <b>Civil</b> Fr <b>Civil</b>																																		
Case Status <b>Pending Administrative Action</b>			Report Type <b>Final</b>																																		
Case Name <b>Civil Road 39 Fire</b>			Investigated By <b>P. Jolivette #1653, J. Hicks #1286</b>																																		
<b>SYNOPSIS</b>																																					
<ul style="list-style-type: none"> <li>On or about April 8, 2010 Poteau/Cold Springs Ranger District conducted a 2500 acre prescribed burn known as Fletcher Prescribed Burn.</li> <li>Burn patrolled by ground and air recon for next 2-3 days with no notable problems.</li> <li>On or about April 14, 2010 @ 1356 a FS employee reported smoke southwest of Booneville.</li> <li>Arkansas Forestry Commission and United States Forest Service conduct Unified Command of the Incident. Weather at 1500 hours 4/14/10. Temperature 85, RH 32, Winds ESE @4-12 MPH.</li> <li>Fire burns pine timber and plantation belonging to Deltic Timber Company. Fire burns approximately two-hundred seventy four (274) acres on private timber land.</li> <li>AFC investigators locate Point of Ignition (POI) with concurrence from FS investigators.</li> <li>On or about April 21, 2010 FS Fire review team inspects site.</li> <li>On or about April 21, 2010 a District employee receives video of fire from individual taping fires on or about April 13, 2010.</li> <li>On or about April 23, 2010 secondary investigation conducted by FS Patrol Captain Jimmy HICKS, with assistance from a District employee and Forest Service Law Enforcement Officer Paul JOLIVETTE.</li> </ul>																																					
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### INTRODUCTION

Reference Case Referral Form submitted and approved on APRIL 29, 2010 by United States Forest Service (USFS) Patrol Captain Jimmy D. HICKS (**Exhibit #1**)

### DETAILS OF THE INVESTIGATION

#### *violations*

*CIVIL.....Potential civil claim against the government of the United States.*  
\* \* \* \* \*

On or about April 8, 2010 Poteau/Cold Springs Ranger Districts conduct a prescribed burn known as the Fletcher Burn. It encompasses approximately twenty five hundred (2500) acres. The burn is monitored by ground and aerial recon for several days following the burn.

On or about April 12<sup>th</sup> or 13<sup>th</sup> an un-named female relative of a Mena District employee records a video of fire burning, by means of her cell phone[**Exhibit #2**]

On or about April 14<sup>th</sup> @ 1356 hours, Cold Springs employee reports a smoke SW of Booneville, AR. Fire crews of the United States Forest Service and Arkansas Forestry Commission contain the fire at 1803 hours (same date). Fire burns approximately two hundred seventy four (274) acres of timber land belonging to Deltic Timber Company

An investigation conducted by an employee of the Arkansas Forestry Commission with concurrence of Forest Service Law Enforcement Officer Paul JOLIVETTE and a District employee place the point of origin at or near a snag on the fire line of the FS prescribed burn [**EXHIBITS #3& #4**]. Dispatch logs indicate the AFC investigator located a "green hollow tree still burning and shooting sparks across the line" at 2044 hours [same date].

On or about April 21<sup>st</sup> or 22<sup>nd</sup> a Regional Review Team comprised of Kent DAVENPORT, Leah WOFFORD, Jay BOYKIN, Andy DYER and others conducted an administrative review of the fire. An additional investigation of the fire was requested by the team. DYER contacted this Officer to conduct a third investigative review of the fire.

On or about April 23, 2010 HICKS along with JOLIVETTE and a District employee conducted a cursory walk throughout the burned area. JOLIVETTE had contacted the un-named (this Officer did not record the name) female that provided video evidence of the fire. Female stated fire was witnessed from low water slab on Road #39 facing south. Fire was at the top of ridge directly south of her position [**Exhibit #4**]. Female stated that area between her position and the fire was unburned at the time of the video and that she did not report the fire as it appeared to be within roads/firelines.

Fuels observed at the point near where the video was taken indicate a head fire crossed Road #39 in the proximity of the low water bridge. Fuel freezing and significant damage to standing materials (stream zones north of Road #39) indicate a head fire emanating from the "draw" leading to the low water bridge. Numerous head and backing fires were noted as consistent with the topography and weather reports [**Exhibit #5**].

The SE corner of the fire was of concern to the review team. It appeared traffic had breached a dirt barricade intended to close the skid trail that ran east/west along the north edge of the plantation. Evidence in this area is consistent with fire behavior associated with weather and topography.

This Officer placed the most likely Point of Ignition as an area on the south fire line near the top of the ridge. Unburned fuels on the north side (private land) of the FS line indicate a low intensity fire and inconsistent burn patterns indicating a fire in the early stages of ignition.



USDA  
Forest Service

REPORT OF INVESTIGATION  
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The area on top of the ridge (within the plantation) indicates a low intensity fire and is consistent with video evidence [Exhibit #2]. Fuels outside of the ridge top show the fire increased in intensity and consumed all fuels as the fire and wind intensified.

I was then shown the standing green tree [Exhibit #3] within the area, but east of my POI. While this Officer cannot state unequivocally that the fire originated within the tree found by other investigators, It does appear the location of the fire is consistent with the other investigators Point of Origin.

The District employee located a tree stand for hunting directly behind the POI approximately fifty (50) yards south west. The stand was located within the burned area (FS prescribed burn) and no evidence exist to indicate this fire originated as a result of hunting or human occupation.

This investigation cannot dispute the findings of other investigators or review teams.

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**USDA**  
**Forest Service**

**REPORT OF INVESTIGATION**  
(Reference FSH 5309.11)

Case/File Number  
**9080697**

**JUDICIAL ACTION**

NOT APPLICABLE

**ADMINISTRATIVE ACTION**

Matter to be referred to District Ranger and Fire Management Staff of the Ouachita National Forest for administrative actions.

**DISPOSITION**

This case will be closed for criminal prosecution pending additional information. No further investigation is necessary.

**EXHIBITS**

[illegible]

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